SICK PORT & TERMINAL INTELLIGENT SENSOR SOLUTION FOR ENHANCED SAFETY AND EFFICIENCY

Ayşen Öztoprak

Business Development Manager - Logistics Automation

SICK Turkey

SICK
Sensor Intelligence.

SICK – worldwide one of the leading manufacturers of sensors and sensor solutions for industrial applications

69 Years of experience. Founded 1946.

6,957 Employees worldwide

88 Countries with SICK presence : More than 50 subsidiaries and participations as well as numerous specialized agencies

1,099 Million euros Group sales in the fiscal year 2014

40,000 Products and thus widest product and technology portfolio in the sensor industry

2,396 Patents and thus leading in developing innovative sensor solutions

ALWAYS CLOSE TO YOU
SHORT DISTANCES SAVE YOU TIME AND MONEY

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- ■ Subsidiaries
- ■ Agencies
- 📍 Sales / Service
- 📍 Production / R&D
- 📍 Regional Competence Center
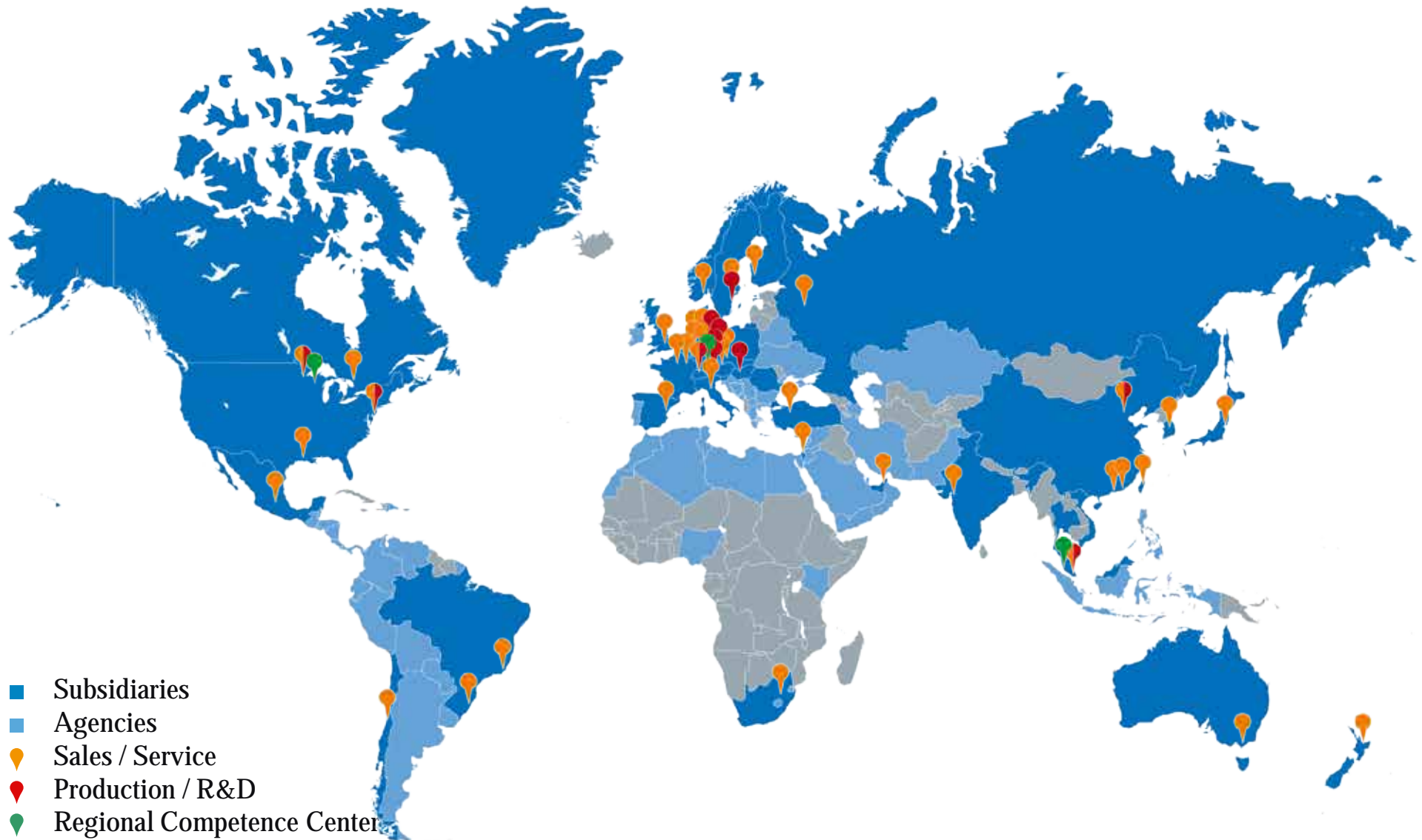
SICK TURKEY AT A GLANCE

20 Years of experience.
1994 – Onur Muhendislik
2004 - GTR.

46 Employees

10 Regional sales engineers in industrial regions

Head Office Location: Istanbul

UTEM – Test and Training Center

WE ARE CLOSE TO YOUR INDUSTRY

FACTORY AUTOMATION   **LOGISTICS AUTOMATION**   **PROCESS AUTOMATION**

§ Automotive and parts supplier
§ Beverage
§ Consumer goods
§ Electronics
§ Food
§ Glass
§ Handling and Assembly
§ Machine tool
§ Packaging
§ Pharma and cosmetics
§ Print
§ Robotics
§ Rubber and plastics
§ Semiconductor
§ Solar
§ Textile
§ Tire
§ Wind
§ Wood

WE ARE CLOSE TO YOUR INDUSTRY

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FACTORY AUTOMATION   LOGISTICS AUTOMATION   PROCESS AUTOMATION

- § Cement
- § Chemical and HPI
- § Maritime
- § Metal and steel
- § Mining
- § Oil and gas
- § Power
- § Waste and recycling

WE ARE CLOSE TO YOUR INDUSTRY

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FACTORY AUTOMATION   **LOGISTICS AUTOMATION**   **PROCESS AUTOMATION**

§ Airport

§ Building management

§ Building safety and security

§ Courier, express, postal and cargo

§ Cranes

§ Industrial vehicles

§ Port

§ Retail and warehousing

§ Storage and conveyor

§ Traffic

REQUIREMENTS

REQUIREMENTS!

Efficiency

SICK

What are the concepts?

SICK RELIABLE SOLUTIONS
@ RTG

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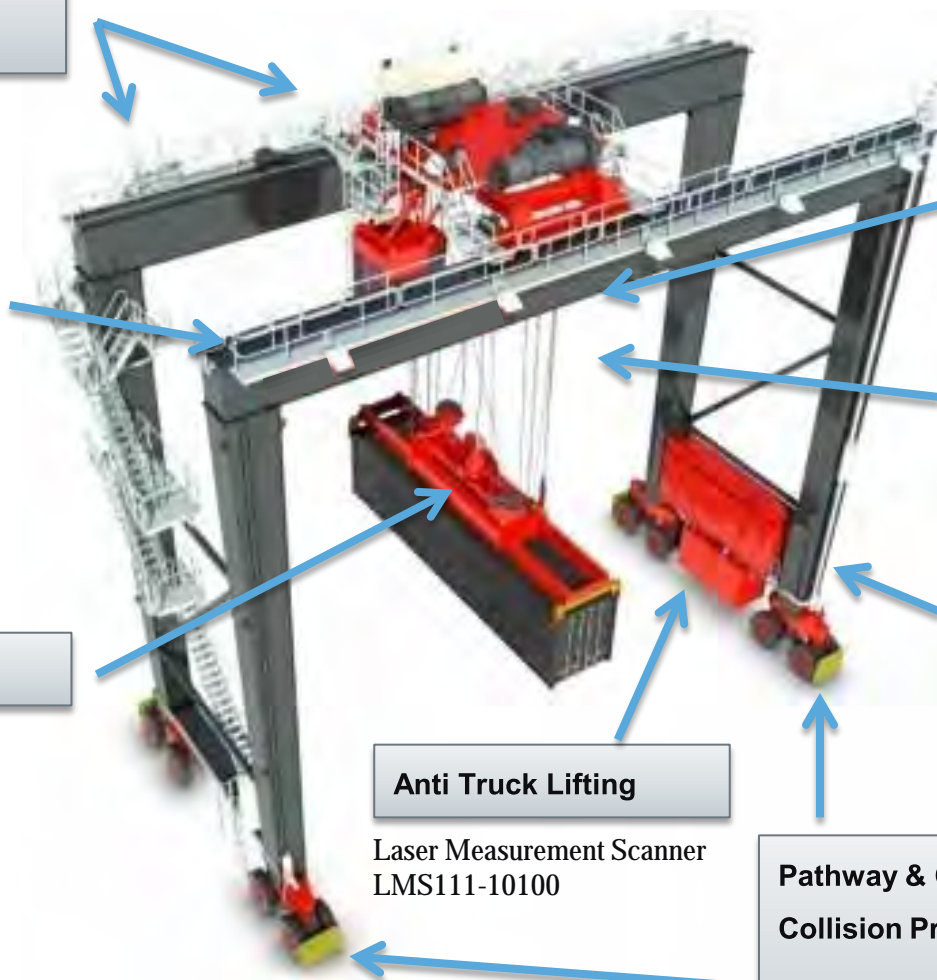**Risk area access protection**

Electro Mechanical
Safety Switch

Trolley Positioning

Linear Encoder
KH53-PXF00038

Twin Twenty Detection

Laser Measurement
Scanner
TIM 556

Container stack profiling / high control

Laser Measurement
Scanner
LMS511-10100 Pro

Graber Positioning

Spreader Positioning

Laser Distance Measurement
DMT10-2-1111

E-RTG Guidance

Laser Measurement Scanner LMS111-10100
Laser Distance Measurement DT35

High Diagnostic Coverage
Laser Scanning System
AOS104-RTG

Anti Truck Lifting

Laser Measurement Scanner
LMS111-10100

Pathway & Cross Travel

Collision Prevention

(front & rearward)

SICK RELIABLE SOLUTIONS
RECOMMENDATION @ AUTOMATED RMG

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Container Stack Profiling

TMEIC Maxview SMART MOVE System based on
SICK Laser Measurement Scanner LMS511-10100
Pro
or
SEOHO Stack Profiling System based on
SICK Laser Measurement Scanner LMS511-10100
Pro

Crane Positioning

RFID
RFU630-13105

Pathway

Collision Prevention

High Diagnostic Coverage
Laser Scanning System
AOS104-RTG

Twin Twenty

Detection

Laser Measurement Scanner
TIM 551

Trolley Positioning

Linear Encoder
KH53-PXF00038

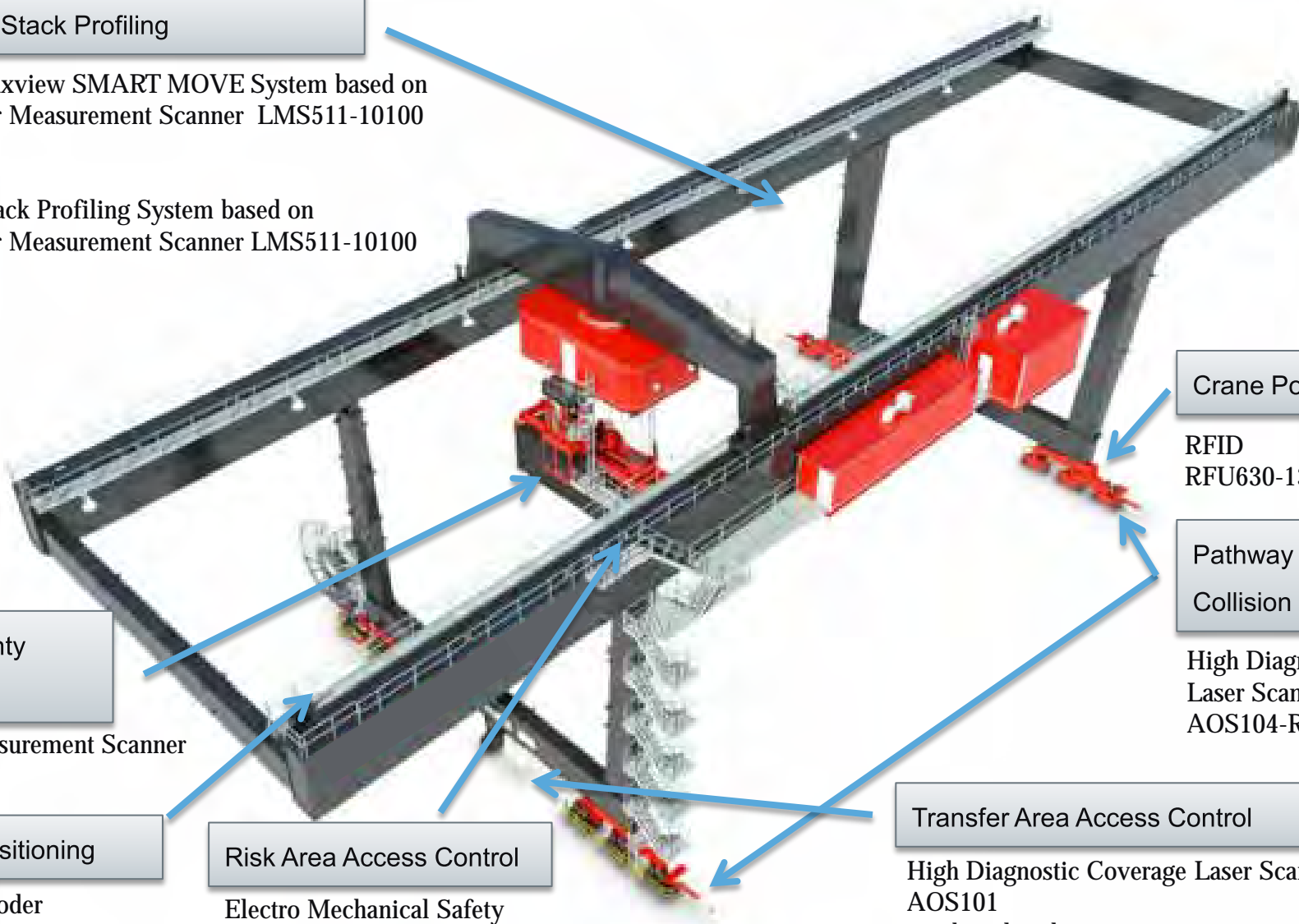**Risk Area Access Control**

Electro Mechanical Safety
Switch

Transfer Area Access Control

High Diagnostic Coverage Laser Scanning System
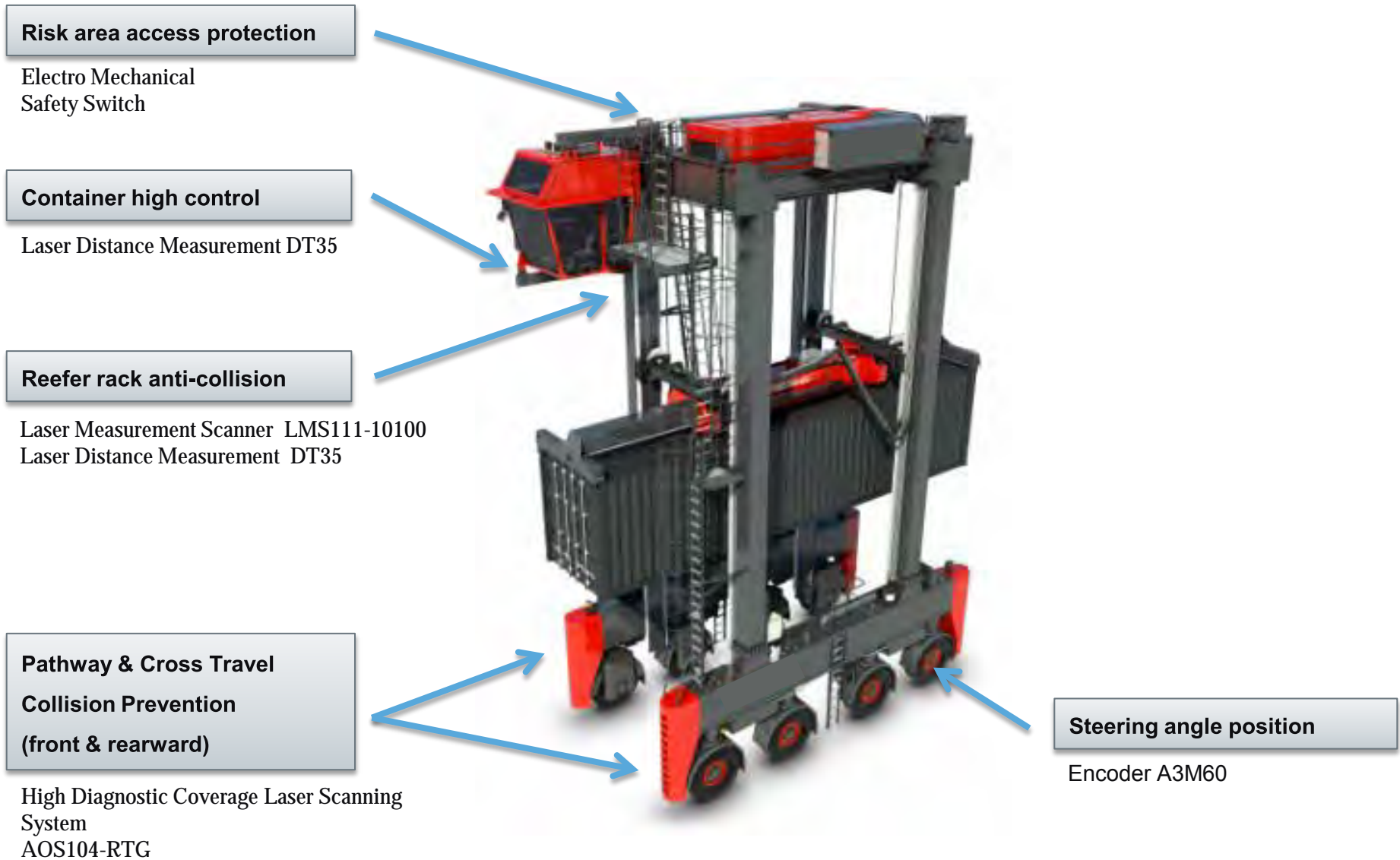AOS101
combined with
Active RFID technology to identify AGV

SICK RELIABLE SOLUTIONS
@ STS CRANE

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Laser Measurement Scanner LDLRS-3600

Vessel Profiling

Laser Distance Measurement DMT10-2-1111

Container Height Detection

Linear Encoder KH53-PXF000107

Trolley Positioning

High Diagnostic Coverage Laser Scanning System AOS502-STS

Boom & Crane to Crane Collision Prevention (right & left)

Electro Mechanical Safety Switch

Risk area access protection

Safety Multi Beam Light Grid with heated column M4000 (M40Z-025000RR0) Column (PUM12-S02)

Lashing platform access control

High Diagnostic Coverage Laser Scanning System AOS104-RTG

Travel Collision Prevention (right & left)

RFID RFU630-13105

Crane Positioning

Twin Twenty Detection

Laser Measurement Scanner TIM 556

Anti Truck Lifting

Laser Measurement Scanner LMS111-10100

Risk area access protection

Electro Mechanical
Safety Switch

Container high control

Laser Distance Measurement DT35

Reefer rack anti-collision

Laser Measurement Scanner LMS111-10100
Laser Distance Measurement DT35

Pathway & Cross Travel

Collision Prevention

(front & rearward)

High Diagnostic Coverage Laser Scanning
System
AOS104-RTG

Steering angle position

Encoder A3M60

Pathway

Collision Prevention

High Diagnostic Coverage
Laser Scanning System
AOS502

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Reach Stacker (RS)

Rear drive Scanner

LMS111
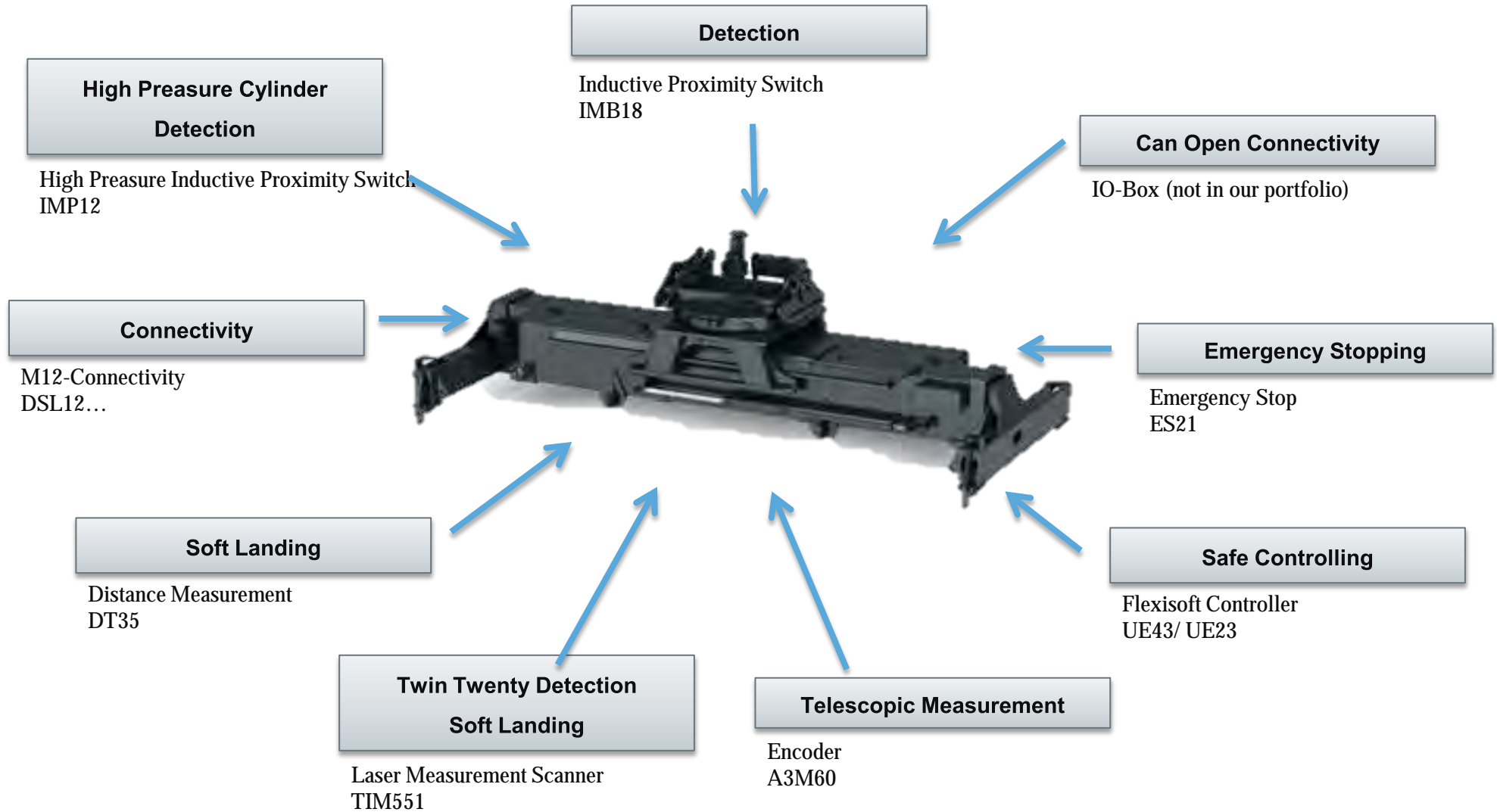
Rear Drive Assistance System

RAS-1200
Reach Stacker Assistance System

System = LMS111 + Controler + Monitor

SICK RELIABLE SOLUTIONS
@ SPREADER

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Detection

Inductive Proximity Switch
IMB18

High Preasure Cylinder Detection

High Preasure Inductive Proximity Switch
IMP12

Can Open Connectivity

IO-Box (not in our portfolio)

Connectivity

M12-Connectivity
DSL12…

Emergency Stopping

Emergency Stop
ES21

Soft Landing

Distance Measurement
DT35

Safe Controlling

Flexisoft Controller
UE43/ UE23

Twin Twenty Detection Soft Landing

Laser Measurement Scanner
TIM551

Telescopic Measurement

Encoder
A3M60

High Diagnostic Coverage
Laser Scanning System
AOS502-STS

Boom & Crane to Crane
Collision Prevention
(right & left)

High Diagnostic Coverage
Laser Scanning System
AOS104-RTG

Travel Collision Prevention
(right & left)
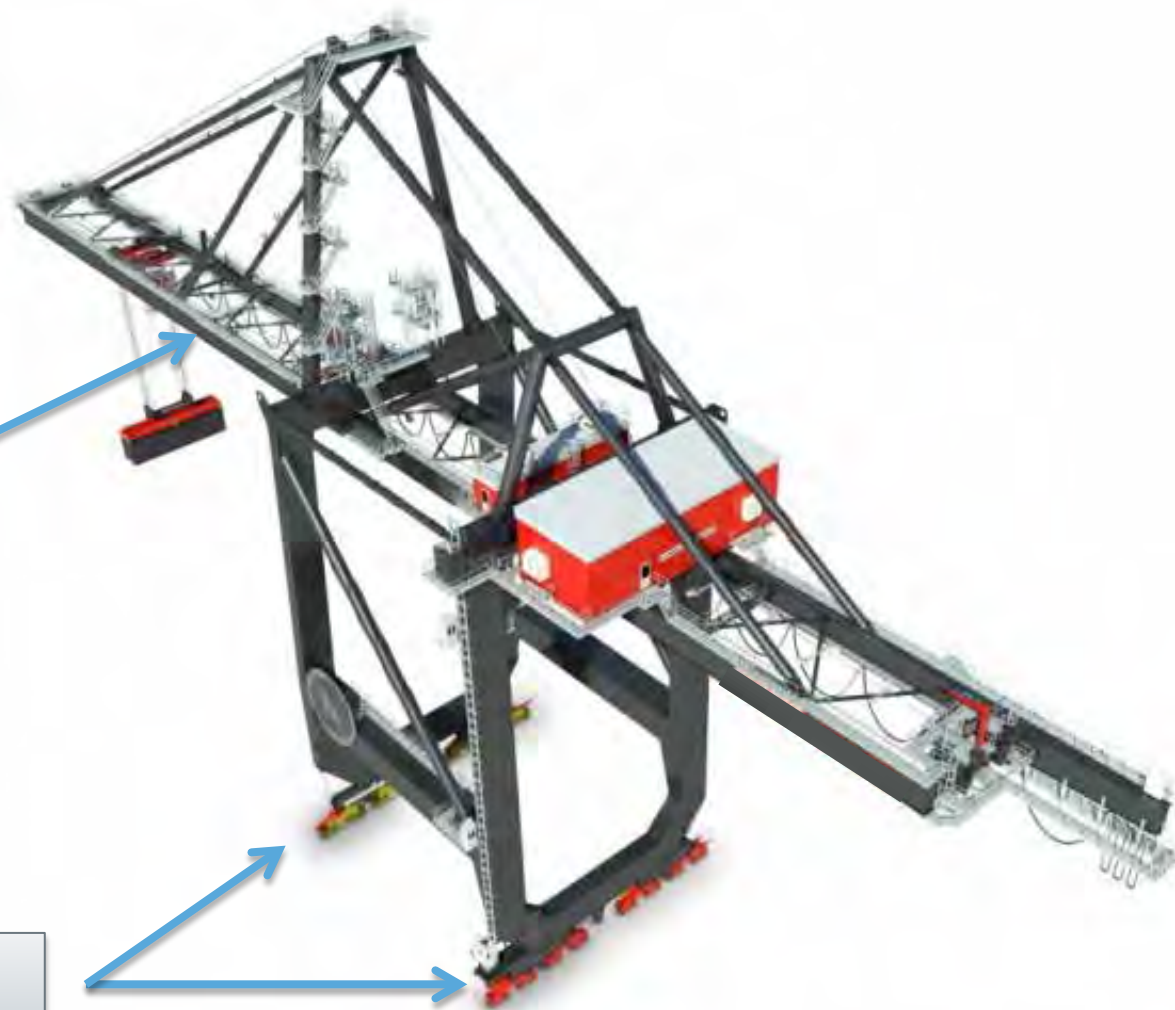
SICK HIGH DIAGNOSTIC COVERAGE SOLUTION
AOS – ADVANCED OBJECT DETECTION SYSTEM | AOS502-STS

For greater safety and efficiency
during container handling

Boom Collision Prevention with high diagnostic coverage of system function and availability!
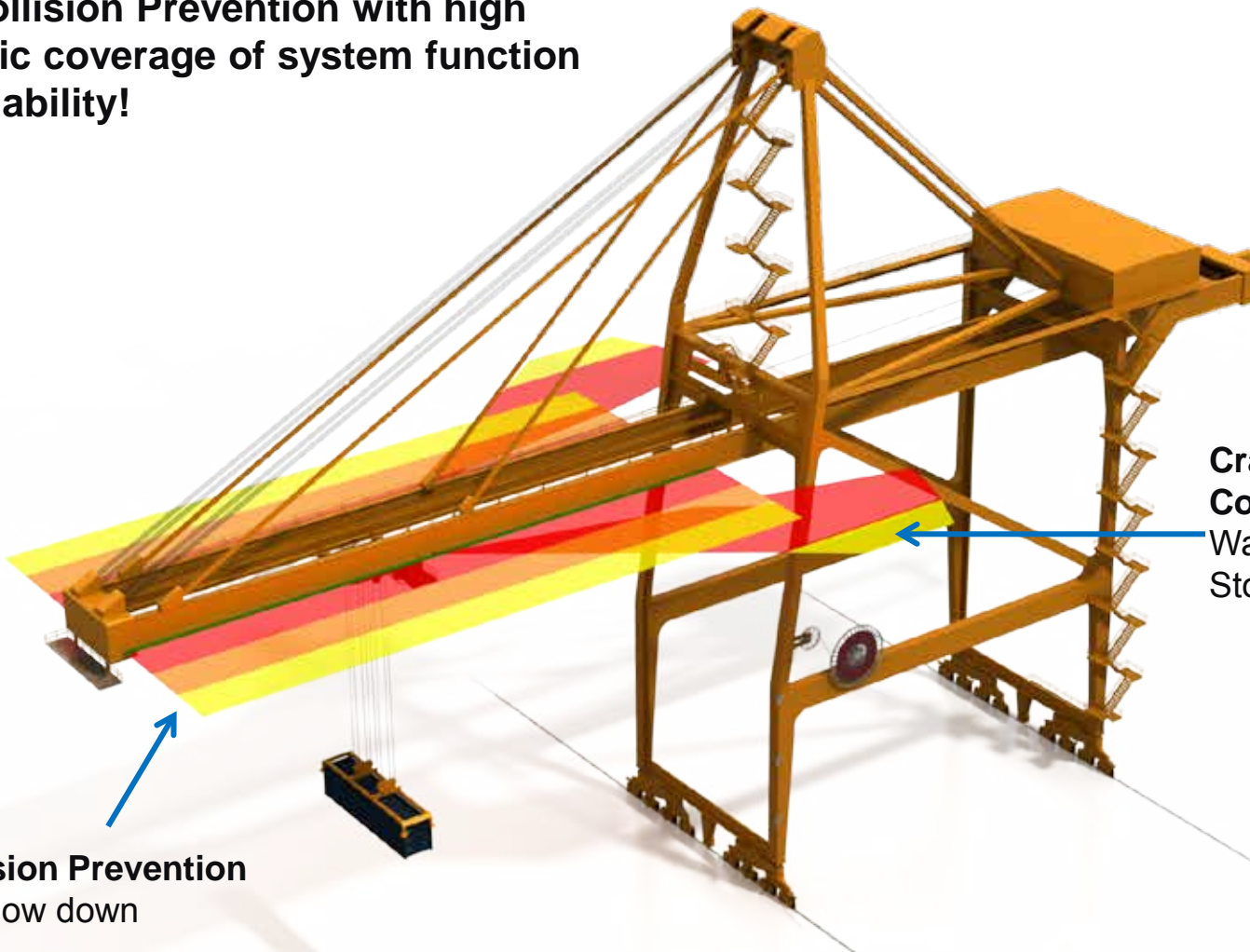
Crane to Crane Collision Prevention
Warning and Stop Laser Field

Boom Collision Prevention
Warning + Slow down
and
Stop Laser Field

LMS511

Flexi Soft

Pathway & Cross Travel

Collision Prevention

(front & rearward)

High Diagnostic Coverage
Laser Scanning System
AOS104-RTG

(MIN. TO WARN BUT LESS AUTOMATED RELIABLE)
NO AUTOMATIC SYSTEM AND NO DIAGNOSTIC COVERAGE!

TODAY: COLLISION PREVENTION / WARNING DEVICES IN PORT CRANES

Warning Beacons and Horns

Video Display System

& simple Ultrasonic Sensors
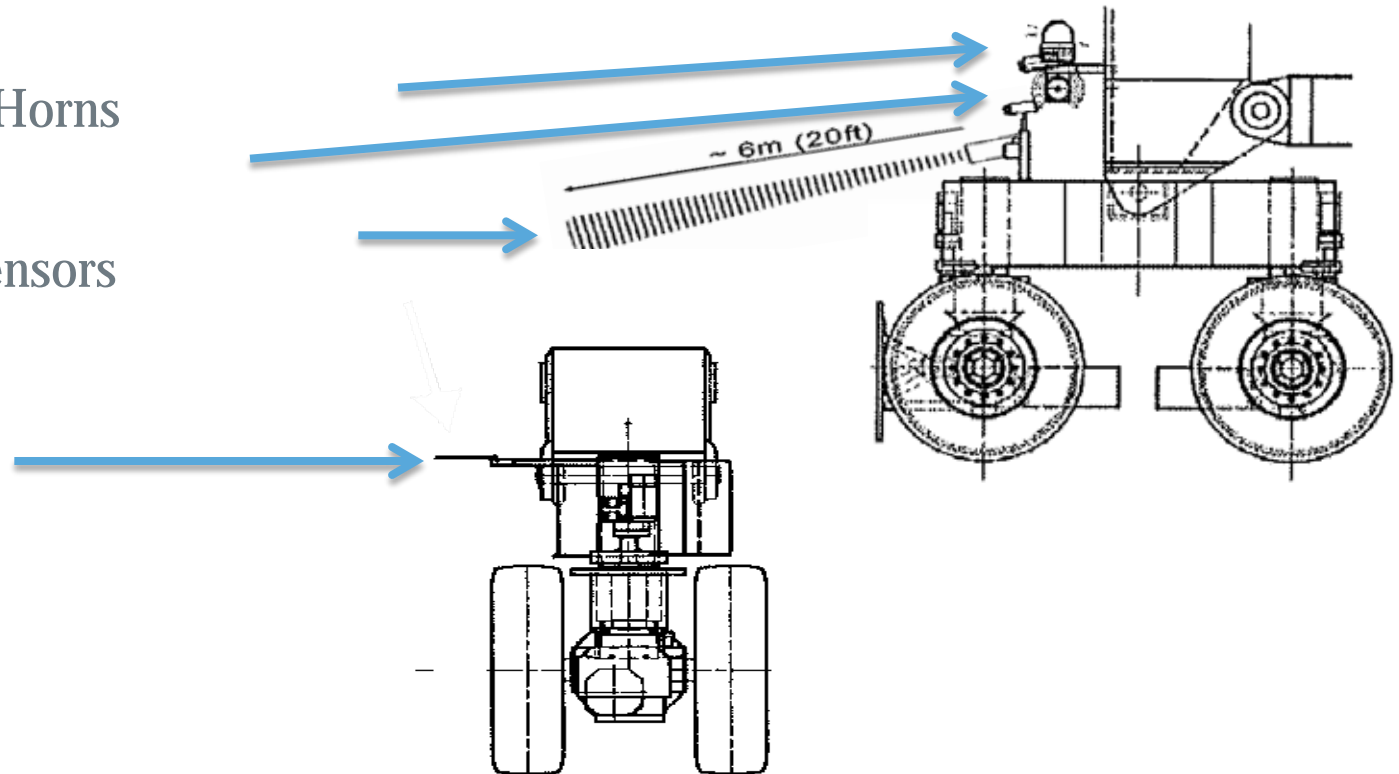
~ 6m (20ft)

Cat`s Wisker

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For greater safety and efficiency during container handling

Pathway and Cross Travel Collision Prevention with high diagnostic coverage of system function and availability!

LMS111   Flexi Soft

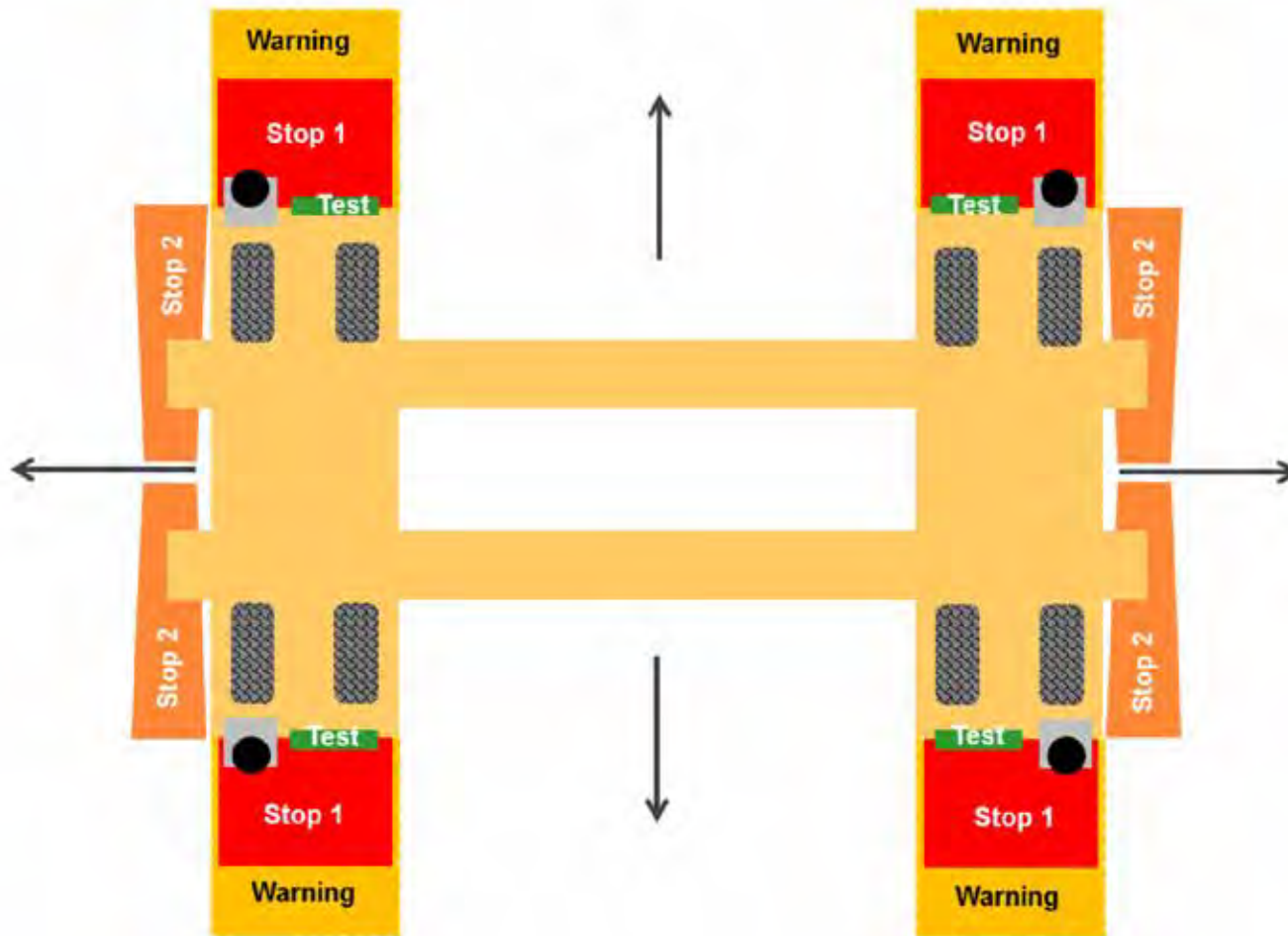**@ RTG**
Cross Travel
Collision Prevention
Warning/Stop
Laser Field

Pathway Collision Prevention
Warning/Stop Laser Field

SICK HIGH DIAGNOSTIC COVERAGE SOLUTION
AOS – ADVANCED OBJECT DETECTION SYSTEM | AOS104-RTG

Pathway and Cross Travel Collision Prevention with high diagnostic coverage of system function and availability!
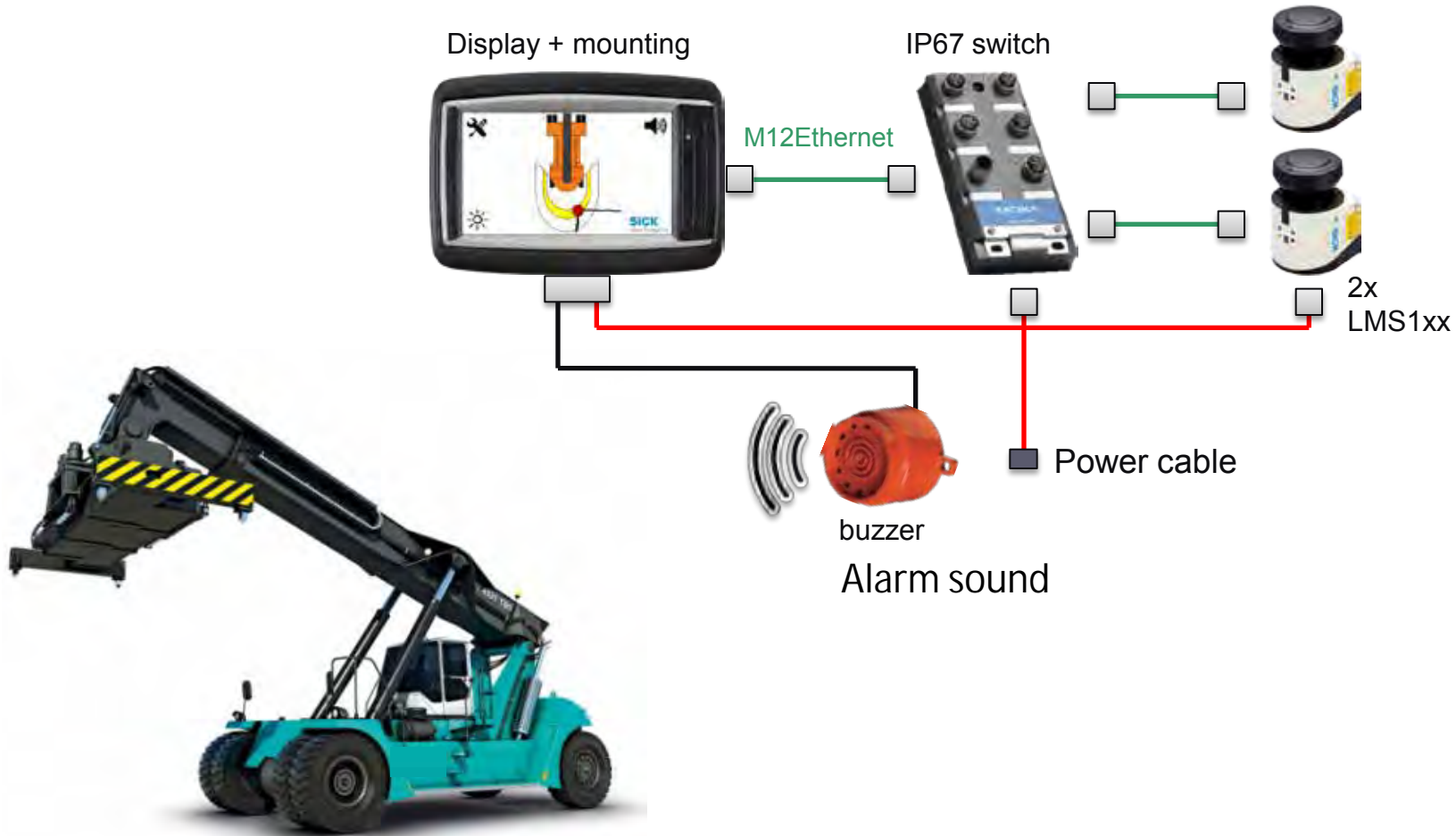

LMS111   Flexi Soft

REAR DRIVE ASSISTANCE – FOCUS 3
@ REACH STACKER

For greater safety and efficiency during container handling

REAR DRIVE ASSISTANCE TO PREVENT COLLISIONS

SICK Sensor Intelligence

RAS-1200 | REACH STACKER ASSISTANT SYSTEM

Display + mounting

IP67 switch

M12Ethernet

2x LMS1xx

Power cable

buzzer

Alarm sound

TRUCKS AT GANTRY CRANES – FOCUS 4
LASER MEASUREMENT SCANNER   LMS111

SICK
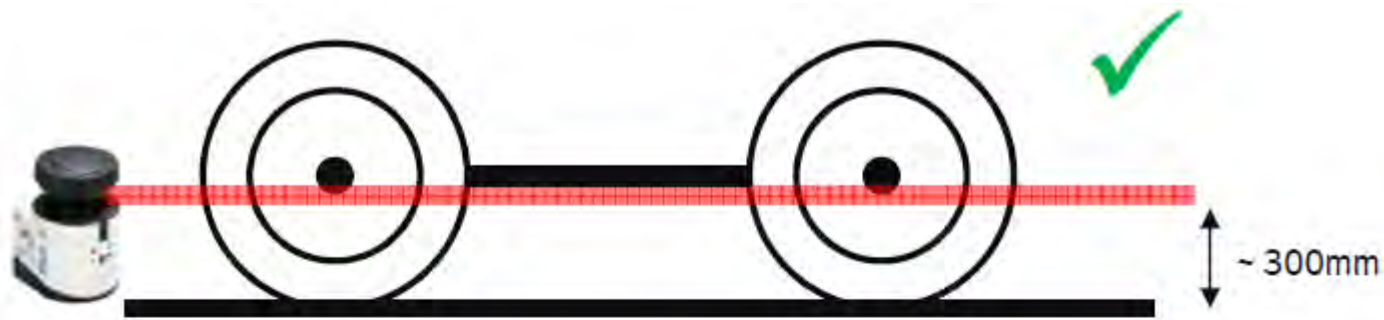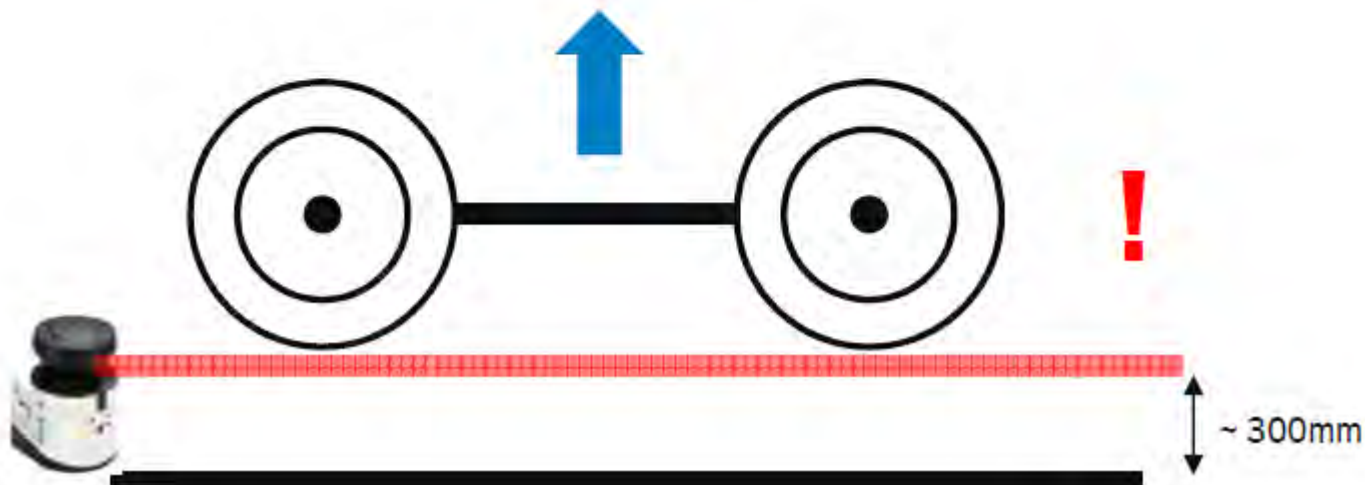Sensor Intelligence

For greater safety and efficiency during container handling
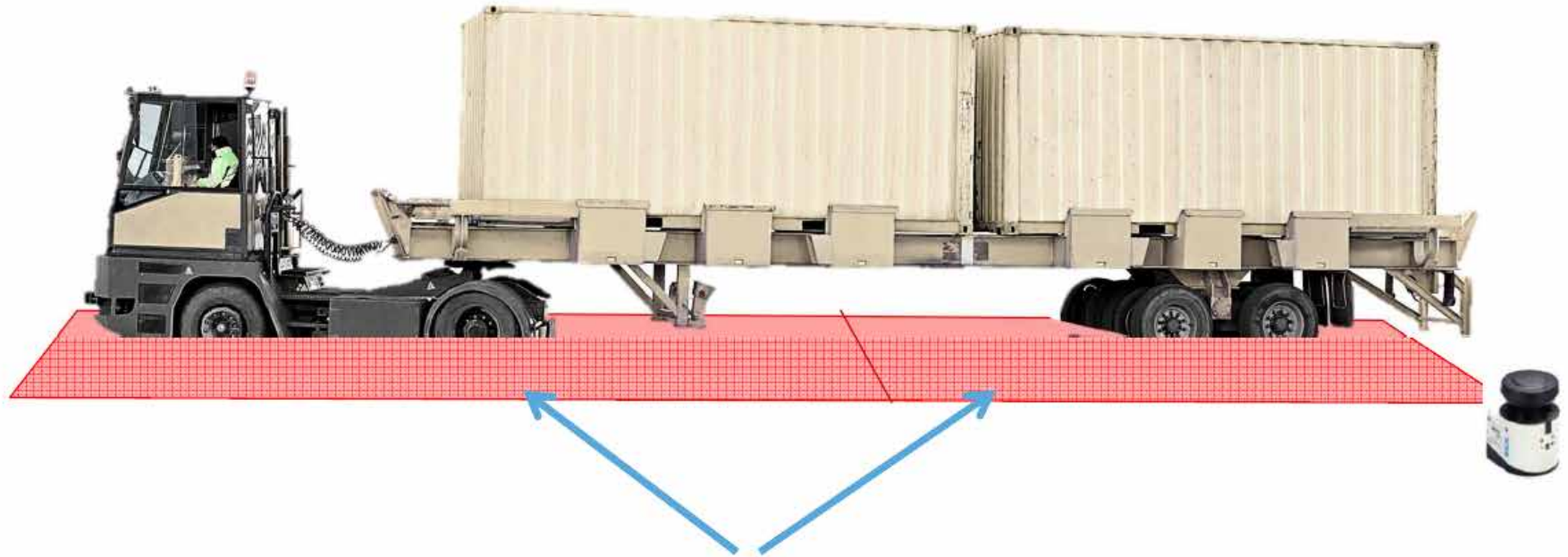
Two monitoring zones for front and rear part of truck

Laser scanner positioned on gantry crane relative to truck position

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~ 300mm

- Both zones to be infringed during lifting movement (indication on separate device outputs)
- Lifting enabled

~ 300mm

- Both zones/device outputs monitored when lifting starts
- After the spreader has reached a defined height, crane control overrides device outputs and continues lifting

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Sensor Intelligence

TT CLUB

Article in the
Port Strategy
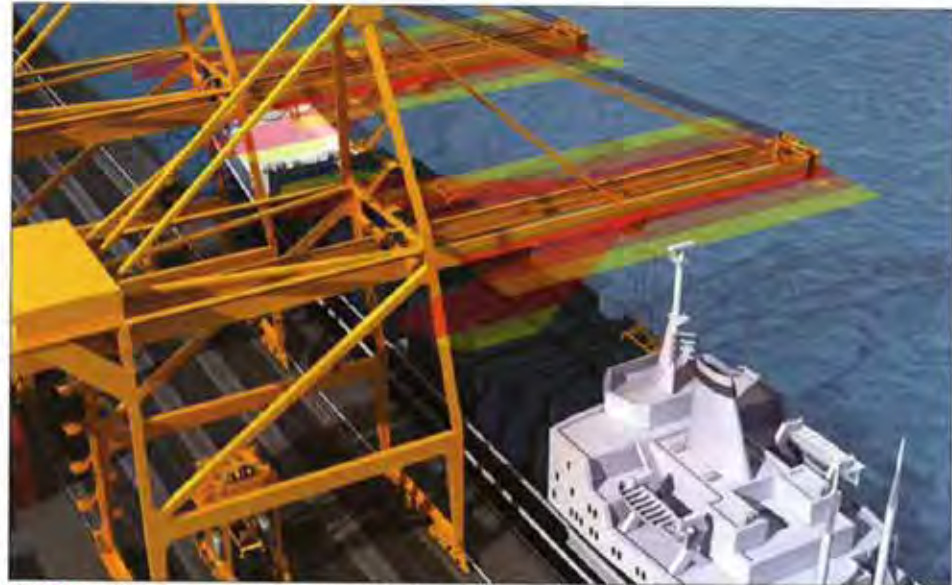Edition 06-2014

portstrategy

Bumping up the agenda

TheOpinion
TT Club's **Laurence Jones** examines the effectiveness of crane anti-boom collision technology

OUTREACH: crane boom anti-collision technology is now well established

THE INTRODUCTION OF boom anti-collision electronic sensors for use on quay cranes has undoubtedly had a beneficial impact. However, it is frustrating to note the continued regularity of this type of accident where the boom of a quay crane collides with a ship.

These collisions vary from minor impacts with the bridge of the ship to, in one instance, an incident which caused around $2m worth of damage and the crane was out of service for six months.

Since the technology to prevent these types of accidents is now well established, it seems puzzling that terminals have not universally protected their own assets and eliminated one liability exposure. Unfortunately, the incentive generally only comes after an operator has experienced a collision.

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TT CLUB

Message

The Opinion
TT Club's **Laurence Jones** examines the effectiveness of crane anti-boom collision technology

'Fitting proven electronic sensor devices to all quay crane booms to prevent them accidentally colliding with ships could save the port industry millions of dollars of damage and operational downtime'

SICK Sensor Intelligence

TT CLUB

TheOpinion
TT Club's **Laurence Jones** examines the effectiveness of crane anti-boom collision technology

Message

(Laurence Jones in Port Strategy about SICK Technology)

… Electronic sensors are now proven to be effective and can provide warning, slow down and stop signals to eliminate this type of accident. They should be retro-fitted to all existing cranes and specified for all new cranes.

A laser sensor system from SICK Sensor Technologies is considered by most people in the industry, as the most proven and cost effective system; this is supported by the TT Club`s experts and experience. …

The global voice and forum for port equipment and technology

§ The mission of PEMA is to provide a forum and public voice for the global port equipment and technology sectors, reflecting their critical role in enabling safe, secure, sustainable and productive ports.

§ Chief among the aims of the Association is to provide a forum for the exchange of views on trends in the design, manufacture and operation of port equipment and technology worldwide.

§ For all Port Equipment generally the Machine Directive is the major standard

§ For those safety specifications which are not clear described in the standard the following organizations are committed to support and promote recommendations and technological "state of the art" solutions to enhance risk reduction.

IMPROVED **SAFETY AND EFFICIENCY** OF CONTAINER OPERATIONS

Benefits

§ Reduction in labor costs & quay, yard errors

§ Improved safety at employees and machines

§ Automated efficient container handling

§ Improves 24/7 availability

MANY THANKS FOR YOUR ATTENTION.

Ayşen Öztoprak

Business Development Manager - Logistics Automation

SICK Turkey

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Sensor Intelligence.